

Previous model number: 610

# Small Sample Pre-Heating Unit

## CHF610-0020

### Introduction

The CHF610-0020 Small Sample Pre-Heater is a portable desktop instrument designed to preheat two small cylindrical canisters containing samples of a Plutonium Containing Material (PCM) to a temperature similar to that of the thermal block control temperature of a CHF610-0020 Transportable Small Sample Calorimeter.

When a sample is transferred from the pre-heater into the calorimeter it is nominally at the same temperature as the thermal block. The sample introduces less of a disturbance to the system equilibrium and the measurement time is shorter. This results in a faster sample throughput.

The pre-heater consists of a single aluminium sample block with two chambers, each of which is large enough to accept a sample canister measuring 40 mm (1.57 in) in diameter by 80 mm (3.15 in) high. Access is gained to the chambers by removing the plug units located on the top of the block. Electrical pad heaters are installed on two sides of the block and each end of the block is fitted with a Peltier cooler unit and fan. A platinum resistance thermometer is installed in the block to measure the temperature.

A Peltier temperature controller is mounted inside the pre-heater case and is factory configured to ensure that both Peltier units provide continuous cooling to the aluminium block. A Eurotherm Series PID temperature controller is connected to the heaters and to the platinum temperature sensor. A temperature set point can be entered into the panel on the front of the pre-heater. The temperature controller monitors the temperature of the block and maintains the constant temperature by applying power to the heater in response to the temperature set point.

### Features

- Single box construction
- Industry standard temperature controller
- Two sample chambers
- Heating and cooling elements included
- No software required - push and go operation
- Bench top operation



### Benefits

- Stand alone operation
- Shortens the measurement time of small sample calorimeters (ANTECH CHF600-0020 Transportable Small Sample Calorimeter)
- Two samples can be conditioned simultaneously in less than 30 minutes



## Specification

System power requirements	
<b>Voltage</b>	220 - 240 VAC $\pm$ 10%
<b>Frequency</b>	50 Hz
<b>Power consumption</b>	400 VA
Environmental	
<b>Enclosure IP Rating</b>	20
<b>Equipment operating temperature range</b>	5 - 35 °C *
<b>Humidity</b>	5 - 95% non-condensing
(* The product has been factory configured to operate in an ambient environment of 5 - 28 °C. It may be necessary to adjust the control parameters if it is operated above 25 °C)	
Physical	
<b>Dimensions (H x W x D)</b>	274 mm x 465 mm x 380 mm (10.79 in x 18.31 in x 14.96 in)
<b>Weight</b>	17 kg (37.48 lb)
<b>Controllers</b>	Eurotherm Series PID Temperature Controller (heat) Thermoelectric Cooler Temperature Controller
Performance	
<b>Stability</b>	$\pm$ 0.1 °C at constant ambient
<b>Control Response</b>	< 100 minutes to achieve stability of $\pm$ 0.1% for a change in set point $\Delta T = 2^\circ$ C (typically 30 minutes)